

METHOD AND APPARATUS FOR IMPROVING CHANNEL
ESTIMATE BASED ON SHORT SYNCHRONIZATION CODE

ABSTRACT OF THE DISCLOSURE

A method and apparatus for estimating a communication channel impulse response $h(t)$ is disclosed. The method comprises the steps of generating $co_m(t) = co(t + mNT_c)$ for $m = 0, 1, \Lambda, M$ by correlating a received signal $r(t)$ with a spreading sequence S_i of length N , wherein the received signal $r(t)$ comprises a chip sequence c_j applied to a communication channel characterizable by an impulse response $h(t)$, and wherein the chip sequence c_j is generated from a data sequence d_i spread by the spreading sequence S_i ; generating an estimated communication channel impulse response $\hat{h}_M(t)$ as a combination of $co_m(t)$ and d_m for $m = 0, 1, \Lambda, M$; and filtering the first estimated communication channel impulse response $\hat{h}_M(t)$ to generate the estimated communication channel impulse response $h(t)$ with a filter f selected at least in part according to the spreading sequence S_i .